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A new species of *Postia* (*Basidiomycota*) from Northeast China

Bao-Kai Cui* & Hai-Jiao Li

Institute of Microbiology, P.O. Box 61, Beijing Forestry University, Beijing 100083, China

*Correspondence to: *baokaicui@yahoo.com.cn*

Abstract — A new polypore, *Postia subplacenta* sp. nov. from Northeast China, is described and illustrated. It is characterized by resupinate basidiocarps, angular pores (3–5 per mm) with a cream buff to pale cinnamon-buff pore surface, and cylindrical basidiospores (4.2–6.0 × 1.9–2.4 µm) that are negative in Melzer's reagent and Cotton Blue. A key to accepted species of Chinese *Postia* is supplied.

Key words — lignicolous, poroid, fungi, *Fomitopsidaceae*, taxonomy

Introduction

Postia Fr. (*Polyporales*, *Basidiomycota*) is an important genus of brown-rot fungi that are widely distributed in the northern hemisphere and mostly grow on gymnosperm wood. Some species of the genus are economically important, such as *Postia guttulata* (Peck) Jülich and *P. lactea* (Fr.) P. Karst., which have been used as medicine in China (Dai et al. 2009a).

Some mycologists consider *Postia* a synonym of *Oligoporus* Bref. (Gilbertson & Ryvarden 1987, Núñez & Ryvarden 2001, Ryvarden & Gilbertson 1994), while others regard it as an independent genus (Dai & Hattori 2007, Larsen & Lombard 1986, Niemelä et al. 2004, Renvall 1992, Wei & Dai 2006). The genus is characterized by an annual growth habit, a monomitic hyphal system with clamp connections, and thin-walled, allantoid to cylindrical or ellipsoid basidiospores. Twenty-eight species have previously been known from China (Cui et al. 2008, Dai 2009, Dai et al., 2003, 2004, 2007a,b, 2009b, Dai & Penttilä 2006, Li et al. 2007, 2008, Wang et al. 2009, 2011, Wei & Dai 2006, Wei & Qin 2010, Yuan & Dai 2008, Yuan et al. 2010).

During a study on the taxonomy and diversity of wood-rotting fungi in Northeast China, two *Postia* specimens were found that represented one previously undescribed species, which we propose as *P. subplacenta*. In addition, we provide an identification key to the *Postia* species thus far reported from China.

Materials & methods

The studied specimens were deposited in the herbarium of Beijing Forestry University (BJFC). The microscopic procedure follows Dai (2010) and Cui et al. (2011). In presenting the variation in the size of the spores, we exclude 5% of measurements (given in parentheses) from each end of the range. The following abbreviations are used: IKI = Melzer's reagent, IKI– = negative in Melzer's reagent, KOH = 5% potassium hydroxide, CB = Cotton Blue, CB– = acyanophilous, L = mean spore length (arithmetic average of all spores), W = mean spore width (arithmetic average of all spores), Q = variation in the L/W ratios between the specimens studied, n = number of spores measured from given number of specimens. Sections were studied at magnifications up to ×1000 using a Nikon Eclipse E 80i microscope and phase contrast illumination. Drawings were made with the aid of a drawing tube. Special colour terms follow Petersen (1996).

Taxonomy

Postia subplacenta B.K. Cui, **sp. nov.** Fig. 1

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Differs from *Postia placenta* in the cream-buff to pale cinnamon-buff pore surface, wider subicular hyphae, smaller basidiospores, and absence of gloeopleurous hyphae.

Type. — China. Jilin Province, Antu County, Changbaishan Nature Reserve, on fallen trunk of *Pinus*, 8.VIII.2011, Cui 10001 (**holotype**, BJFC).

Etymology — *subplacenta* (Lat.) denotes a similarity with *Postia placenta*.

Fruitbody — Basidiocarps annual, resupinate, corky when fresh, corky to fragile when dry, up to 5 cm long, 3 cm wide, and 2.5 mm thick at the center. Pore surface white to cream-buff when fresh, cream-buff to pale cinnamon-buff when dry; pores angular, 3–5 per mm; dissepiments thin, entire to lacerate. Margin indistinct, narrow to almost lacking. Subiculum cream to cream-buff, corky when dry, ≤0.3 mm thick. Tubes paler than pore surface, pale cream-buff, fragile when dry, ≤2.2 mm long.

Hyphal structure — Hyphal system monomitic; generative hyphae bearing clamp connections, IKI–, CB–; tissues unchanged in KOH.

Subiculum — Generative hyphae hyaline, thin- to mostly slightly thick-walled, occasionally branched, interwoven, 3–7 µm in diam.

Tubes — Generative hyphae hyaline, slightly thick- to distinctly thick-walled, with a wide to narrow lumen, occasionally branched, interwoven, 2–5 µm in diam. Cystidia and cystidioles absent. Basidia clavate with four sterigmata and a basal clamp connection, 12–18 × 4–5 µm; basidioles in shape similar to basidia, but slightly smaller.

Spores — Basidiospores cylindrical, hyaline, thin-walled, smooth, IKI–, CB–, (4.0–)4.2–6.0(–6.9) × 1.9–2.4(–2.5) µm, L = 5.07 µm, W = 2.11 µm, Q = 2.37–2.45 (n = 60/2).

Type of rot — Brown rot.

Additional specimen examined — **China. Heilongjiang Province**, Yichun, Fenglin Nature Reserve, on stump of *Pinus*, 1.VIII.2011 Cui 9818 (BJFC).

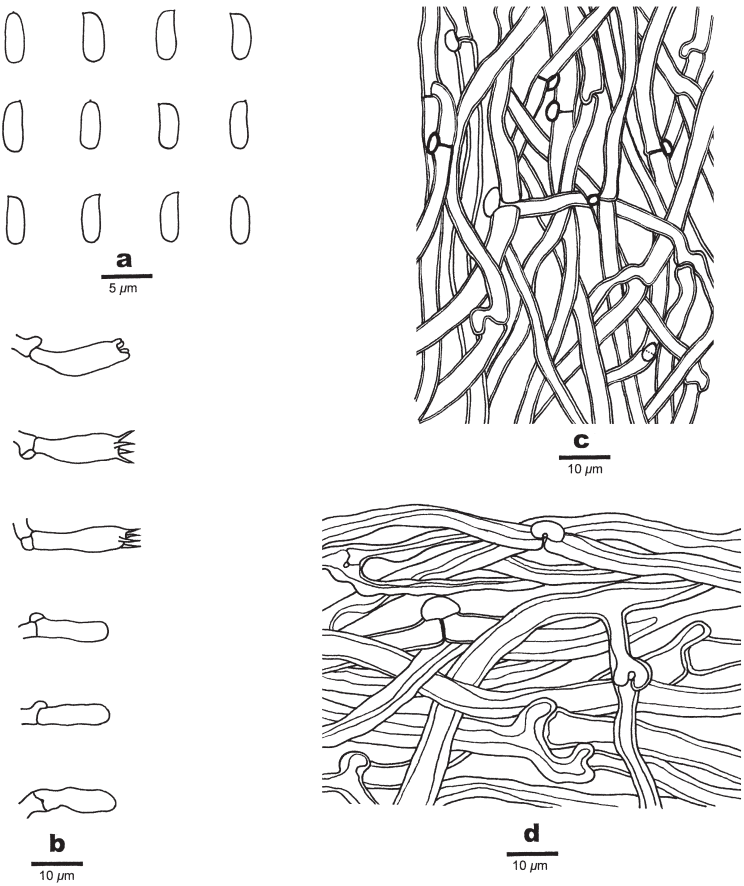

Fig. 1. *Postia subplacenta* (holotype), microscopic structures.
a: Basidiospores. b: Basidia and basidioles. c: Hyphae from trama. d: Hyphae from subiculum.

Remarks — *Postia subplacenta* resembles *P. placenta* (Fr.) M.J. Larsen & Lombard in having resupinate basidiocarps, similar pores, and cylindrical basidiospores; however, *P. placenta* has a salmon-pink pore surface, gloeopleurous hyphae, narrow subicular hyphae, and larger basidiospores (5.5–7 × 2–2.5 μm; Gilbertson & Ryvarden 1987, Ryvarden & Gilbertson 1994).

Postia subplacenta is similar to *P. rancida* (Bres.) M.J. Larsen & Lombard, which differs in having rancid taste and larger basidiospores (6–8 × 2–3 μm; Gilbertson & Ryvarden 1987).

Postia obliqua Y.L. Wei & W.M. Qin, recently described from Southwest China (Wei & Qin 2010), may be confused with *P. subplacenta* in its resupinate

basidiocarps and similar pores and basidiospores (4.8–6.3 × 2.0–2.5 μm) but differs in its very large basidiocarps with oblique tubes that usually form imbricate pseudopilei and the presence of gloeopleurous-like hyphae.

Macroscopically, *Postia subplacenta* looks somewhat like *Oligoporus rennyi* (Berk. & Broome) Donk, which, however, has chlamydospores and produces basidiospores that are oblong-ellipsoid and thin- to slightly thick-walled (Ryvarden & Gilbertson 1994).

Key to species of *Postia* in China

1. Basidiocarps effused-reflexed, pileate or stipitate 2
1. Basidiocarps resupinate 23
2. Basidiocarps stipitate or substipitate 3
2. Basidiocarps effused-reflexed or pileate 4
3. Pores 1–3 per mm ..... *P. subundosa* Y.L. Wei & Y.C. Dai
3. Pores 3–5 per mm ..... *P. ceriflua* (Berk. & M.A. Curtis) Jülich
4. Basidiocarps with distinct grey to bluish tints 5
4. Basidiocarps white, cream, yellowish or brown 7
5. On angiosperm ..... *P. alni* Niemelä & Vampola
5. On gymnosperm 6
6. Basidiospores <1.8 μm wide ..... *P. caesia* (Schrad.) P. Karst.
6. Basidiospores >1.8 μm wide ..... *P. luteocaesia* (A. David) Jülich
7. Basidiocarps becoming brown when bruised or when dry 8
7. Basidiocarps unchanged when bruised or dry 10
8. Gloeocystidia present ..... *P. leucomallella* (Murrill) Jülich
8. Gloeocystidia absent 9
9. Basidiospores <1.6 μm wide ..... *P. lateritia* Renvall
9. Basidiospores >1.7 μm wide ..... *P. fragilis* (Fr.) Jülich
10. Basidiocarps chalky when dry ..... *P. calcarea* Y.L. Wei & Y.C. Dai
10. Basidiocarps fragile, corky or woody hard when dry 11
11. Cystidia present 12
11. Cystidia absent 14
12. Cystidia thin-walled ..... *P. amurensis* Y.C. Dai & Penttilä
12. Cystidia thick-walled 13
13. Cystidia amyloid in Melzer's reagent ..... *P. pileata* (Parmasto) Y.C. Dai & Renvall
13. Cystidia inamyloid in Melzer's reagent ..... *P. balsamea* (Peck) Jülich
14. Pores bigger, 1–3 per mm ..... *P. undosa* (Peck) Jülich
14. Pores smaller, >3 per mm 15

15. Gloeocystidia present 16
15. Gloeocystidia absent 17
16. Hyphal pegs abundant ..... *P. gloeocystidiata* Y.L. Wei & Y.C. Dai
16. Hyphal pegs absent ..... *P. qinensis* Y.C. Dai & Y.L. Wei
17. Pileal surface more or less pink when fresh 18
17. Pileal surface never pink when fresh 19
18. Basidiospores >1.5 μm wide ..... *P. persicina* Niemelä & Y.C. Dai
18. Basidiospores <1.5 μm wide ..... *P. cana* H.S. Yuan & Y.C. Dai
19. Pileal surface zonate ..... *P. zebra* Y.L. Wei & Y.C. Dai
19. Pileal surface azonate 20
20. Basidiocarps mild, upper surface greyish brown ..... *P. tephroleuca* (Fr.) Jülich
20. Basidiocarps bitter, upper surface cream or yellow-brownish 21
21. Basidiospores >2 μm wide ..... *P. guttulata*
21. Basidiospores <2 μm wide 22
22. Basidiocarps woody hard when dry ..... *P. stiptica* (Pers.) Jülich
22. Basidiocarps fragile when dry ..... *P. lactea*
23. Basidiocarps becoming reddish to rusty brown when touched ..... *P. lateritia*
23. Basidiocarps unchanged when touched 24
24. Basidiospores mostly >2 μm wide, cystidia absent 25
24. Basidiospores mostly <2 μm wide, cystidia present 28
25. Basidiocarps salmon pink; basidiospores 2–3 μm wide ..... *P. placenta*
25. Basidiocarps white or cream; basidiospores 2–2.5 μm wide 26
26. Basidiocarps with rancid smell ..... *P. rancida*
26. Basidiocarps without rancid smell 27
27. Basidiocarps very large, gloeopleurous hyphae present ..... *P. obliqua*
27. Basidiocarps small, gloeopleurous hyphae absent ..... *P. subplacenta*
28. Cystidia thick-walled ..... *P. pileata*
28. Cystidia thin-walled 29
29. Pores 5–6 per mm; basidiospores mostly <1 μm wide ..... *P. simanii* (Pilát) Jülich
29. Pores 3–4 per mm; basidiospores mostly >1 μm wide
..... *P. hibernica* (Berk. & Broome) Jülich

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